

## **CHEMICALLY MODIFIED MUTANT SERINE HYDROLASES SHOW IMPROVED CATALYTIC ACTIVITY AND CHIRAL SELECTIVITY**

### **ABSTRACT OF THE DISCLOSURE**

This invention provides novel chemically modified mutant serine hydrolases  
5 that catalyze a transamidation and/or a transpeptidation and/or a transesterification reaction.  
The modified serine hydrolases have one or more amino acid residues in a subsite replaced  
with a cysteine, wherein the cysteine is modified by replacing the thiol hydrogen in the  
cysteine with a substituent group providing a thiol side chain comprising a moiety selected  
10 from the group consisting of a polar aromatic substituent, an alkyl amino group with a  
positive charge, and a glycoside. In particularly preferred embodiments, the substituents  
include an oxazolidinone, a C<sub>1</sub> to C<sub>15</sub> alkyl amino group with a positive charge, or a  
glycoside.

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